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Malaysian Entrepreneurship Development Center (MEDEC)
Universiti Teknologi MARA
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40000 Shah Alam

Selangor, Malaysia

Tel: [603]-55129077, Extension 3002

Fax: [603]-55113284

Email: iwahab@tm.net.my

Guest Editor:

Prof. Dr. Ichiro Shiobara

Professor of Accounting
Graduate School of Commerce
Waseda University
1-6-1 Nishi Waseda Shinjuku-ku
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CONTENTS

Page

Ichiro Shiobara	Preface	ix - x
Mohammad Saeed and Kamal Kishore Jain	Malaysian Model of Entrepreneurship Development for its Indigenous People	1 - 14
Samir Ranjan Chatterjee and Lim Cheng Hwa	Regionalization Strategies of SME Sector: An Empirical Study of Singapore Managers	15 - 31
Mahfooz A. Ansari, Rehina Aafaqi and Sharmila Jayasingam	Entrepreneurial Success, Gender and Leadership Behavior	33 - 46
Andrea Smith-Hunter	Oligopolistic Discrimination: A New Theory on Women and Minority Business Ownership	47 - 64
Anabela Dinis and Marilyn Helms	Women and Entrepreneurship: A Case of Portugal	65 - 88
Eric J. Romero and Kim T. Hinrichs	Teaching an Entrepreneurship Lab: Lessons Learned	89 - 96
John S. Bowers and Ilan Alon	Globalization of U.S. Small Technology Firms: A Practitioner Perspective on Selected Electronics-Related Sectors	97 - 111
Syeda-Masooda Mukhtar	Lack of Commitment or Lack of Resources? Owner-Managers' Attitudes Towards Training Provision Within The U.K. Firms	113 - 131
Peruvemba S. Jaya and Matthew H. Roy	Placing The Entrepreneur in Context: Lessons From The Leadership Literature for Asia Pacific Region	133 - 151

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PREFACE

Prof. Dr. Ichiro Shiobara

Guest Editor

Special Issue on "Entrepreneurship Around The World"

It gives me an immense pleasure to place this special issue of the JOURNAL OF INTERNATIONAL BUSINESS & ENTREPRENEURSHIP into the hands of our esteemed readers. I am grateful to the leadership of the JIBE for providing me this enriching opportunity of acting as a guest editor for this special issue devoted to "ENTREPRENEURSHIP AROUND THE WORLD". I am pretty sure that the readers will find lot of food for thought in the articles that have been carefully selected for this special issue, after a thorough peer reviewing process. I decided to be very selective in accepting articles based on the recommendations of the reviewers, as I intended to provide quality articles representing divergent perspectives on different dimensions of entrepreneurship around the world . It could be possible for me to carry it out only with the help of the colleagues, associates and peers from different parts of the world. I would especially like to record a deep sense of appreciation for the help and support that I got from Professor Dr. Zafar U. Ahmed at all stages of the editing process. My sincere thanks are due to my peers who willingly agreed to act as reviewers.

Most of the books, articles, and research studies in the area of entrepreneurship around the world are confined to the scholarly analysis of the entrepreneurial process, of the traits and characteristics of successful entrepreneurs, guidance on business plans, raising capital, financial projections, venture capital, legal and tax matters, etc. There is another category of scholars and researchers who, out of their excitement, end up confining the discipline of entrepreneurship to motivation and leadership styles, traits, and theories. I don't see a problem either with them or even with those who are churning out literature on "History of Entrepreneurs". But, I hold and support the view that there is a need of concerted efforts on the part of the scholars in the area to examine the multi-dimensional issues of entrepreneurship development from divergent perspectives in order to provide an integrated picture of the discipline rather than

casting reflections, projecting stray thoughts, and coming out with their isolated views, without taking cognizance of strategic implications of entrepreneurial issues.

The success story of Silicon Valley in the United States reveals how universities, governmental agencies, venture capitalists, head hunters and entrepreneurs have joined hands together to create a “unique habitat”, an envy of the globe, that offers an environment fostering the development of new ventures, new industries, new business cultures, and unparalleled growth. It calls for an examination of strategic issues as to how everyone has responded to internal as well as external opportunities and threats.

It is high time for breaking the ground in the area of entrepreneurship research, as there is a great need for a profound research base in order to provide support to the budding entrepreneurs when they strive to enter into business internationally, and to the successful entrepreneurs as they explore virgin and untapped markets. We need research studies to cover the sophisticated topics such as navigating the world of venture capital funding and turning technological innovations into successful market realities, and also at the time to address the political, legal, social, psychological, cultural, and economic dimensions of entrepreneurship problems pertaining to marketing, production & operations, research & development, human resources and finance.

I wish and hope that our business schools and our scholars will respond to the needs of our times, and will play a proactive role in creating an entrepreneurial culture across the globe, for the welfare of the mankind.

**GLOBALIZATION OF U. S. SMALL TECHNOLOGY FIRMS: A
PRACTITIONER PERSPECTIVE ON SELECTED
ELECTRONICS-RELATED SECTORS**

John S. Bowers
Ilan Alon

Abstract

This paper reviews various factors that owners and managers of U. S. small technology firms in the aircraft & spacecraft, electrical machinery, and instrument industries can consider as they become more involved with the internationalization of their businesses. Small businesses, including small technology firms, are an important aspect of each country's economy. As a result of globalization, these types of small businesses can grow and improve profitability by taking advantage of business opportunities in various countries and regions throughout the world. International trade for three industries (aircraft & spacecraft, electrical machinery, and instruments) is reviewed to illustrate the potential opportunities for small technology firms in these industries.

John S. Bowers is an Engineering/Marketing Manager, Custom Electronics, Inc. New York. Ilan Alon is an Assistant Professor of International Business at the State University of New York-Brockport, New York.

INTRODUCTION : GLOBALIZATION

International trade (i.e., exporting and importing between countries and regions) has had a major impact on all types of businesses throughout the world. It has led to a level of competitiveness that is increasingly sophisticated and is called globalism or globalization (Deresky, 1997).

Globalization is the trend toward a single, integrated, and interdependent global economy in a single global marketplace (Naisbitt and Aburdene, 1990; Hill, 1998). Helen Deresky (1997) refers to globalism as “global competition characterized by networks that bind countries, institutions, and people in an interdependent global economy.” Tim Hindle (1999) defines globalization as “a strategy in which companies aim to sell their products and services all around the world.”

Globalization of the world’s marketplace is not a new phenomenon. It started a long time ago with Marco Polo and his trading routes, the Bedouins and their famous markets at Timbuktu, etc. (Whigham-Desir, 1997).

Globalization has had a positive impact on small businesses of all types. These types of companies are becoming more aggressive, and include all levels of technology (i.e., high-tech, low-tech, and no-tech) (Deresky, 1997).

According to Daniel Vasella (1997), the major factors that promote the growth of globalization include “the liberalization of world trade, the establishment of regional trading blocks, the mobility of labor and capital, a reduction in the cost of information and its transmission, the worldwide availability of new technologies, and the global reach of the free market.”

Markets and production are affected by globalization. Domestic and national markets are evolving into regional markets, and national and regional markets are integrating into a global market. This is referred to as the globalization of markets. Many manufacturing companies are purchasing raw materials, components, and other products and services from foreign countries in all parts of the world in an effort to lower the cost, and improve the quality and functionality of their products. This is referred to as the globalization of production (Hill, 1998).

Globalization has had, and will continue to have, a important impact on small technology firms because it can offer opportunities for these types of companies to reduce costs by improving their economies of scale (Hindle, 1999). In addition, globalization can also expand revenues and boost profits (Hill, 1998).

Many examples of a global marketplace exist for U. S. products, and include, but are not limited to, the following geographic regions, country groups, and international regional governmental organizations:

- ASIA (Links to Other Sites; Technical Notes, 1998): The Asian Pacific Economic Cooperation (APEC) and the Association of South East Asian Nations (ASEAN) are two of the international regional governmental organizations that exist in Asia.
- AUSTRALIA / NEW ZEALAND (Technical Notes, 1998): ANZCERTA is an international regional governmental organization that exists between these two countries.
- EASTERN EUROPE (Meagher, 1998): New-to-market sales to Central and Eastern European companies can be somewhat more difficult than to Western European companies. The countries of Central and Eastern Europe include approximately 125 million people, but are not monolithic. The fifteen countries in this region are at different stages in their transition to a market economy, and U. S. exporters may have to have different approaches in each of these countries. However, the Central and Eastern Europe Business Information Center (CEEIBC) helped more than forty U. S. businesses export more than \$60 million worth of products to this region.

Albania, Bulgaria, the Czech Republic, Hungary, Lithuania, Macedonia, Poland, and Slovakia are frequently cited as examples of U. S. trading partners:

- NORTH AMERICA (Naisbitt and Aburdene, 1990; Technical Notes, 1998): The North American Free Trading Agreement (NAFTA) is the most recent trading agreement between the U. S., Canada, and Mexico.

- SOUTH AMERICA (Gerstenfeld & Luengo, 1998; Technical Notes, 1998): The Andean Group (ANCOM) and the MERCOSUR group are two of the international regional governmental organizations that exist in South America. ANCOM includes the countries of Bolivia, Columbia, Ecuador, Peru, and Venezuela. These countries account for approximately 85 million people. The members of MERCOSUR include the countries of Argentina, Brazil, Paraguay, and Uruguay. Associate members of the MERCOSUR agreement include Chile and Bolivia. The MERCOSUR countries account for approximately 225 million people. These free trade agreements, and NAFTA, have lowered trade barriers and have changed the markets for the individual countries from domestic markets to larger regional markets.

The economic conditions have been improving, and the economic fundamentals have been changing, in Latin and South America in the last decade. While the Gross Domestic Product (GDP) has been increasing for Argentina, Brazil, Chile, Columbia, Mexico, Peru, and Venezuela, inflation has been decreasing. The MERCOSUR agreement appears to be the most important agreement in South America for future economic growth. Brazil is the most significant country because it has the region's largest economy, the world's ninth largest economy, and the greatest population of any country in South America.

- WESTERN EUROPE (Going Global, 1998): Europe's demand for U. S. products is growing and is an important region for U. S. exporters. Ease of entry, convertible currencies, skilled work forces, stable political climates, and approximately 390 million consumers are typically highlighted as reasons for the importance of the international trade relationship between the U. S. and Europe. Approximately 70% of U. S. exporters export to Europe. It is one of the fastest growing markets for U. S. high-technology exports.

Some of Europe's top U. S. trading partners include:

- UNITED KINGDOM: The U. K. remains the largest European market for the U. S. and is the fourth largest on a worldwide basis (after Canada, Mexico, and Japan). The U. K. represents a growing and highly receptive economy for small U. S. businesses, and is one of the easiest points of entry.

- GERMANY: The German market is the largest in Europe. Small U. S. exporters need to promote innovative high-technology products that include high quality and modern design.
- FRANCE: The French market is very important for U. S. exporters. It is the tenth largest market for U. S. products and is third in Europe (behind Germany and the U. K.). France has the world's fourth largest industrial economy. The French and the U. S. share a status as the world's top two exporting countries in three key sectors: agricultural goods, defense related products, and services.
- THE NETHERLANDS: This country ranks near the top of the list for the most favorable business environments as a result of a highly stable political and economic climate, a sophisticated financial industry, a well-educated workforce, and a strategic location (i.e., the geographic center of Europe).

IMPORTANCE OF SMALL AND MEDIUM ENTERPRISES

Small businesses are important to the U. S. economy, and make an important contribution to the U. S. role in the international community, for the following reasons (Vasella, 1997; Glover, 1998a; Glover, 1998b; Glover, 1999):

- Small businesses represent 99.7% of all employer firms.
- Small businesses employ 53% of the private nonfarm work force.
- Small businesses account for 51% of private sector output.
- Small businesses (less than 500 employees) represent 95.7% of U. S. exporters of goods in 1992.
- Small businesses contribute 29.5% of the value of exported goods in 1992 as compared to 47.0% of overall sales in 1992.
- Manufacturing enterprises accounted for 9.3% of all firms that exported in 1992. Within this group of manufacturing exporters, small firms accounted for 92.6% of the group.
- Small businesses play an important, and dynamic, role as radical innovators.
- Small businesses create jobs
- Start-ups are critically important to the health of the economy.

In the U. S., in general, a small business is defined as an enterprise that has fewer than 500 employees. There are exceptions for some industries (e.g., 750, 1000, 1500, etc.). These size standards are listed by the Standard Industrial Code (SIC) as defined by 13 CFR 121.201. It should be noted that the SIC system is being replaced by the North American Industry Classification System (NAICS).

In addition to its annual list of the 200 Best Small Businesses in the U. S., *Forbes* magazine has published an annual list of the 100 best foreign small companies. Annual revenues of at least \$5,000,000 but less than \$500,000,000 were used to define small businesses for these lists (Christy and Zajac, 1997; Christy, 1998; Christy and Cyran, 1999).

International trade has changed the popular thinking of the 1950's, 1960's, and 1970's with respect to company size. John Kenneth Galbraith argued that the integration of science, engineering, and highly specialized skills would produce large firms that had a large advantage over small firms, and that entrepreneurs were destined to become "diminishing figures in the new industrial system" (Kotkin, 2000). It is now clear that small businesses are an important force in the U. S. economy. Typically, these types of small businesses, including small technology firms, have carved out a niche in their respective markets.

As a result of improvements to telecommunications, reduced travel and transportation costs, an increased number of trade shows, federal and state export initiatives, and English as a universal business language, small U. S. businesses can more easily participate in the global marketplace. Some believe that small businesses will become more important in the global marketplace, and will have to participate in globalization to prosper in the future (Barrier, 1994; Birch, 1996).

INTERNATIONALIZATION OF SMALL ENTERPRISES

As small technology firms become more aggressive with respect to their plans for internationalization, they can conduct market research to investigate new opportunities in a variety of countries, geographic regions, country groups, and international regional governmental organizations.

A study of small and medium-sized manufacturing firms in Wisconsin by Moini (1998), indicates that the awareness, use, and effectiveness of governmental export assistance programs depends on the level of internationalization of the firm. For the purpose of this study, the levels of internationalization included the “non-exporter” firm, the “partially interested” exporter firm, the “growing” exporter firm, and the “regular” exporting firm. These levels were based upon earlier studies and models that included six-stage models.

Owners and managers of small technology firms should realize that time is an important factor for success in the global marketplace because changes are happening at an ever-increasing speed and are becoming more unpredictable. Therefore, the levels, or stages, of internationalization may be insufficient for small technology firms as they deal with a rapidly changing internationalization process and the relative simplicity of entering new markets within regional trading blocks and adjacent foreign markets (Tavakoli and McKierman, 1999).

An exploratory study by Karagozoglu and Lindell (1998) indicate that small technology-based firms have various motives to internationalize, must overcome various obstacles to internationalize, and must implement adaptive measures to compete successfully.

According to their study, the most frequently mentioned (i.e., greater than 40% of the respondents) **motives** to internationalize are generally dependent upon the preferences of individual firms and include “global market opportunities more promising than the domestic market” (59%) and “inquiries from potential foreign buyers” (59%).

The results from their study indicate that the most frequently mentioned (i.e., greater than 40% of the respondents) **barriers** to internationalize are also dependent on individual firms and include “difficulties in forming international partnerships” (47%), “lack of managerial experience and competence to exploit the international business opportunities” (44%), and “difficulties in gathering information about the global markets, technologies, and competitors (44%).

The **adaptive measures** that the sampled small technology firms identified as the practices and approaches that are important for globalization are divided into three categories: external relationships, internal measures, and R&D and innovative practices.

The most frequently mentioned (i.e., greater than 40% of the respondents) **external relationships** that are needed to internationalize are “tighter relationships with customers” (88%), “long term relationships suppliers” (88%), “international cooperative agreements and alliances” (76%), and “domestic cooperative agreements and alliances” (70%).

The most frequently mentioned (i.e., greater than 40% of the respondents) **internal measures** that are needed to internationalize are “development of a technology strategy” (97%), “total quality management” (91%), “mechanisms to monitor international business environment” (82%), “reengineering” (79%), “adoption of advanced manufacturing technologies” (76%), “management development” (74%), and benchmarking (56%).

The most frequently mentioned (i.e., greater than 40% of the respondents) **R&D and innovative practices** that are needed to internationalize are “greater number of new product introductions” (82%), “emphasis on new product development” (82%), “emphasis on higher R&D process efficiency” (79%), “technology fusion” (79%), “R&D collaboration with domestic partners” (79%), “higher R&D budget” (76%), “R&D collaboration with foreign partners” (76%), and “breakthrough technologies” (68%).

Globalization will continue to change and shape the climate for small businesses in the 21st century. Consequently, many new (and existing) small businesses are using the Internet to identify international markets and international sources of supply as a part of their strategies for growth and success. Small businesses are increasingly able to use the Internet to internationalize because of improvements to the Internet infrastructure, Web-based business applications, and new technology alliances. The Internet is the gateway for customers, suppliers, and other business partners. It can provide information about products, corporate information, business trends, the economy, etc. Therefore, the ability to develop effective Web sites and manage information technology is critically important for small businesses. Developing

information technology for international markets can be challenging for companies at all levels of internationalization. Translating a Web site from English into multiple languages can be difficult and expensive, but a number of companies are developing products and services that help small businesses internationalize their Web sites. The Internet also provides the same benefit to foreign competition. Therefore, small businesses can be subjected to foreign competition in the products and services that they provide to the marketplace and in the products and services that they purchase. Increasing numbers of small businesses will have to export in order to be competitive (if it will give them access to new markets). These types of small businesses may have to be involved with niche markets (Dalton, 1998; Engler, January 1999; Engler, October 1999; Glover, 2000; Greengard 2000).

THE SELECTED INDUSTRIES AND THEIR GLOBAL COMPETITIVENESS

Several industrial classification systems are used throughout the world to standardize the tracking and analysis of international trade.

At a regional level, the North American Industry Classification System (NAICS) is used between Canada, Mexico, and the United States to standardize the classification and the reporting of industry statistics. It replaced the Standard Industrial Classification (SIC) system after 60 years of service.

At the international level, the following types of industrial classification systems are utilized:

Harmonized Commodity Description and Coding System (HS)

According to the World Customs Organization (WCO), this system, generally referred to as the "Harmonized System" or "HS", is a multipurpose international product nomenclature developed by the WCO (formerly the Customs Cooperation Council (CCC)) in Brussels, Belgium. It comprises about 5,000 commodity groups, each identified by a six-digit code, that is arranged in a legal and logical structure. It is supported by well-defined rules to achieve uniform classification. This nomenclature is broadly based on the CCC nomenclature that is used by the European Union and

many other countries, on the Standard International Trade Classification (SITC) system that is used by the United Nations, on some aspects of the national tariff of the United States (TSUS), and on the Canadian nomenclature. There is no obligation under the World Trade Organization (WTO) for members to adopt the Harmonized System (Harmonized Systems Convention, SCH: Product Classification).

International Standard Industrial Classification of All Economic Activities (ISIC)

According to the United Nations, ISIC is a standard classification of economic activities so that entities can be classified according to the activity they carry out. Wide use has been made of ISIC, both nationally and internationally, in classifying data according to kind of economic activity in the fields of population, production, employment, gross domestic product, and other economic activities (ISIC Classification Profile, 2000).

Standard International Trade Classification (SITC)

According to the United Nations, the purpose of the SITC is for compiling international trade statistics on all merchandise entering international trade, and to promote international comparability of trade statistics (SITC Classification Profile, 2000).

It should be noted that the U. S. government doesn't track exports by business size (Join the Globetrotters, 1999).

Small U. S. businesses in the aircraft & spacecraft (SITC code 792), electrical machinery (SITC code 778), and instrument (SITC code 874) industries can be involved with international trade and can look forward to increased scales of economy, revenue, and profits. These industrial sectors are described as follow:

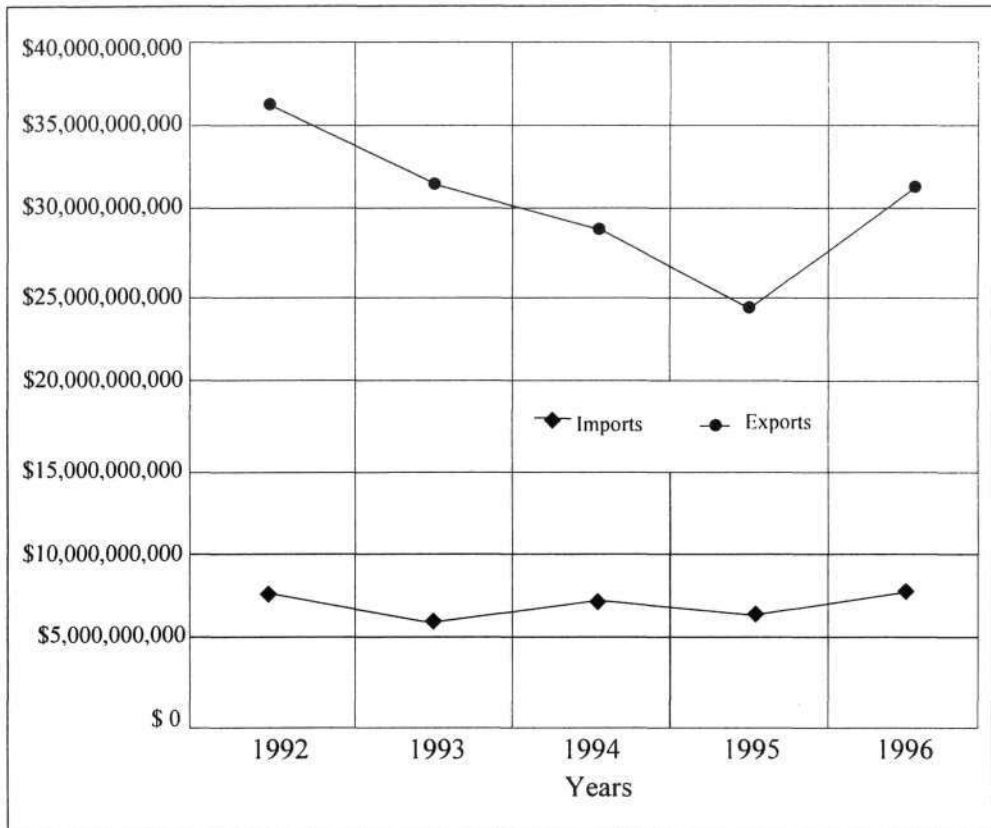
Aircraft & Spacecraft (SITC 792)

This group includes helicopters (792.1), airplanes less than 2,000 kg (792.2), airplanes between 2,000 kg and 15,000 kg (792.3), airplanes exceeding 15,000 kg (792.4), spacecraft and satellites (792.5), other types of aircraft (792.8), and parts for goods in this group (792.9) (SITC Rev. 3 code 792, 2000).

This group is of interest because these types of systems use electronic components and assemblies that are manufactured by a variety of small technology firms in the United States.

Total U. S. Imports and Exports for SITC 792 between 1992 and 1996 are shown in Figure 1.

Figure 1: U.S. Trade (SITC 792) - Aircraft and Spacecraft



Electrical Machinery (SITC 778)

This group includes batteries and electric accumulators (778.1), electric filament or discharge lamps (778.2), electrical equipment for internal combustion engines and vehicles (778.3), electromechanical tools (778.4), electrical capacitors (778.6), electrical machines and apparatus (778.7), electrical machinery and equipment (778.8) (SITC Rev. 3 code 778, 2000).

This group is of interest because these types of systems use electronic components and assemblies that are manufactured by a variety of small technology firms in the United States.

Total U. S. Imports and Exports for SITC 778 between 1992 and 1996 are shown in Figure 2.

Instruments (SITC 874)

This group includes compasses and navigational equipment (874.1), drawing and mathematical calculating instruments (874.2), flow, level, and pressure measuring instruments (874.3), physical or chemical analysis instruments (874.4), scientific instruments (874.5), automatic instruments (874.6), electrical testing instruments (874.7), parts and accessories (874.9) (SITC Rev. 3 code 874, 2000).

This group is of interest because these types of systems use electronic components and assemblies that are manufactured by a variety of small technology firms in the United States.

Total U. S. Imports and Exports for SITC 874 between 1992 and 1996 are shown in Figure 3.

CONCLUSIONS AND IMPLICATIONS

It is clear that globalization has had, and will continue to have, implications for businesses throughout the world – especially small businesses. As a result of the importance of small businesses to the U. S. economy, internationalization of U. S. small businesses will become increasingly important. The owners and managers of small businesses need to be aware that there are exporting opportunities in a wide range of industries in a variety countries and regions. Small technology firms can, and should participate in the global marketplace to improve sales and profits. The international trade associated with the aircraft & spacecraft, electrical machinery, and instrument industries in the United States can provide new opportunities for U. S. small technology firms.

Figure 2: U.S. Trade (SITC 778) - Electrical Machinery

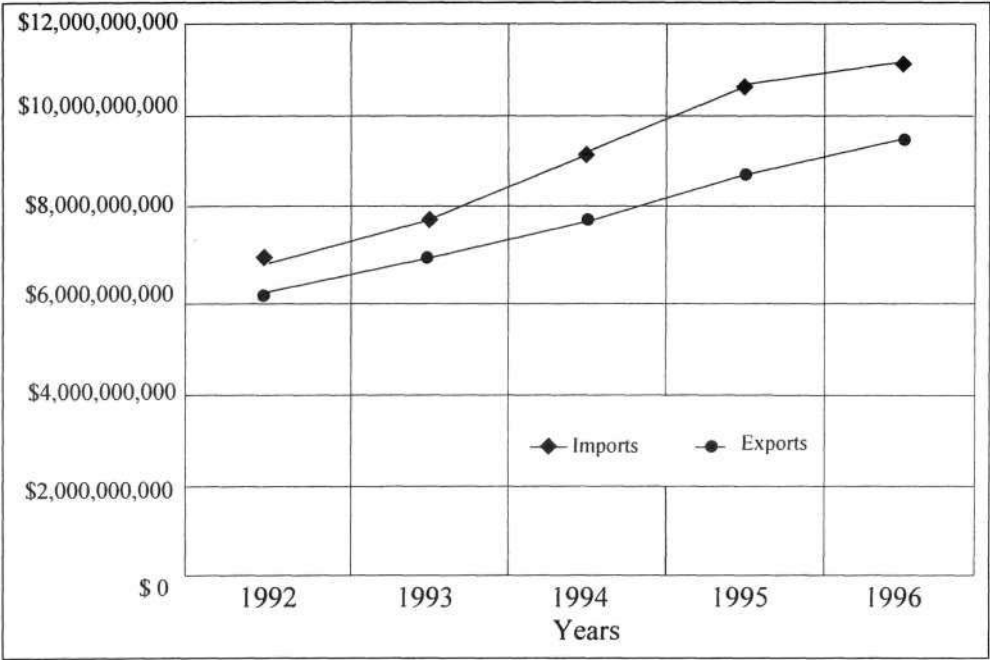
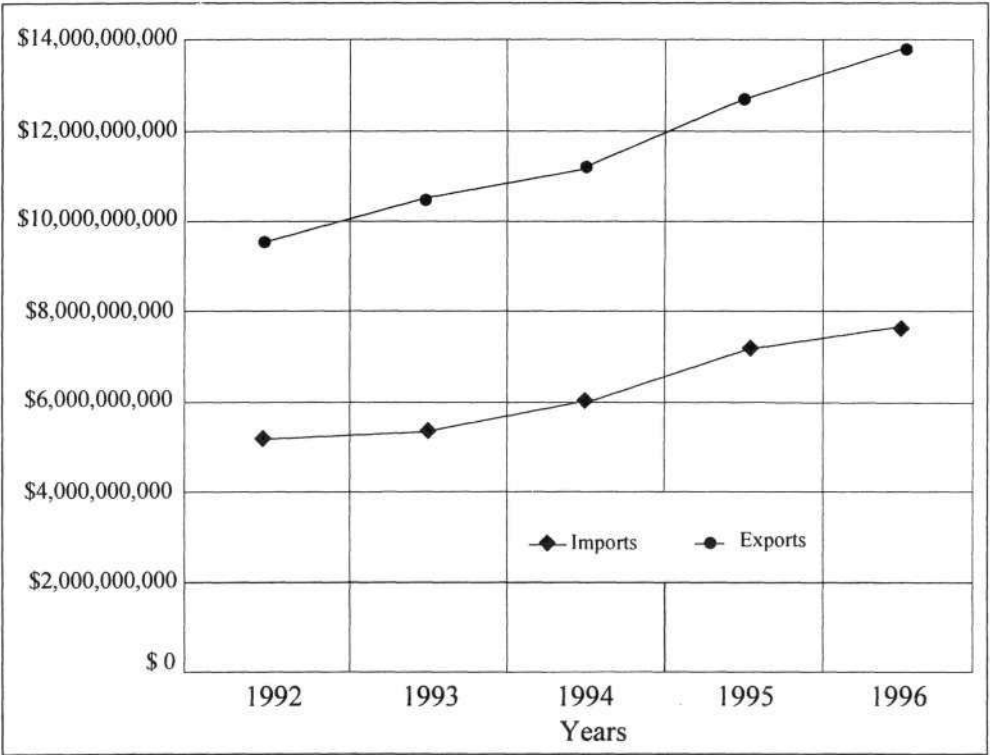


Figure 3: U.S. Trade (SITC 874) - Instruments



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